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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/867,046	05/29/2001	Nathanael Hill	ER-090-US-01	6093

7590 07/11/2003

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EXAMINER

HORTON, YVONNE MICHELE

ART UNIT

PAPER NUMBER

3635

DATE MAILED: 07/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Lithographic finality
do 1112 claim 13
pg 4 says ultra molten
metal "moisture" from
the plasma contact the
surface of the channel
they "modify" the surface
by burning & welding to
the surface channel. At
additional metal deposits
on the surface it forms peaks...

(classes 1-12 allow
13-26 112 rej
27-37 allow
38 112 rej
39-43 103 rej
44-46 allow

49 rej 102
50 obj
51 rej 102
52 obj

Office Action Summary

Application No.
09/867,046

Applicant(s)
Nathaneal Hill

Examiner
YVONNE M. HORTON

Art Unit
3635



— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Apr 16, 2003
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-12, 27-37, and 44-48 is/are allowed.
- 6) ☒ Claim(s) 13, 38, 39, 41, 49, and 51 is/are rejected.
- 7) ☒ Claim(s) 14-26, 40, 42, 43, 50, and 52 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

Art Unit: 3635

DETAILED ACTION

Response to Amendment

1. The amendment filed 4/16/03 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: there is no support in the specification for the channel comprising a “modified surface”.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 13-26, 38-43 and 49-52 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear if the “modified surface” is the same layer as the layer of bonded metal or a separate/different layer. In the claims appear to be claiming two different layers - a “modified surface” layer and a layer of bonded metal. However, as stated above, the “modified surface” layer is not supported in the specification, and until further clarification the claims are being examined in light of the specification with there being a channel having a layer of bonded metal.

Art Unit: 3635

Claim Rejections - 35 USC § 102

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 49 and 51 stand rejected under 35 U.S.C. 102(b) as being anticipated by US Patent #6,403,465 to LIU et al. LIU et al. discloses a thermal barrier including a channel (150) disposed between a first and a second component (110) and having a layer of metal (130) bonded in the channel after being deposited from a plasma (IMP), and an adhesive composition (120) disposed in the channel (190); wherein the first and second structural components are bonded together.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 39-43 stand rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent #6,403,465 to LIU et al. LIU et al. discloses a thermal barrier including a channel (150) having a layer of metal (130) bonded in the channel after being deposited from a plasma (IMP), and an adhesive composition (120) disposed in the channel (190). LIU et al discloses the basic claimed thermal barrier except for explicitly detailing the amount of adhesive shrinkage and shear strength. Although LIU et al. is silent in this regard, it would have been an obvious matter of design choice to select a known material on the basis of its suitability for the use intended. The applicant's details several different metals used in his thermal barrier. Thus, there does not

Art Unit: 3635

appear to be any criticality in the type of metal used to form the barrier. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made that the selection of the type of adhesive would depend greatly on the kind of metal used to form the barrier. Hence, the selection of the desired amount of shrinkage and shear strength would also vary depending upon the kind of metal used.

Allowable Subject Matter

8. Claims 13,38,39,41,49 and 51 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

9. Claims 14-37,40,42,43,50,52 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

10. The claims remain as being allowed for the reasons set fourth in the previous Office Action dated 1/14/03.

Response to Arguments

11. Applicant's arguments filed 4/16/03 have been fully considered but they are not persuasive.

In regards to the applicant's argument that LIU et al. Merely teaches a the prevention of copper diffusion, this is partially so. However, the prevention of copper diffusion is considered under thermal conditions ranging from temperatures between 20 to 450 degrees Celsius. Hence,

Art Unit: 3635

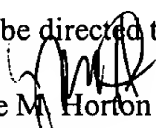
the prevention of copper diffusion is heavily influence by the temperature and how the cooper forms a thermal "barrier", column 6, line 10-15, in response to the involved temperature.


Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yvonne M. Horton whose telephone number is (703) 308-1909.


Yvonne M. Horton
Patent Examiner
Art Unit 3635
July 9, 2003


Carl D. Friedman
Supervisory Patent Examiner
Group 3600